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DEPARTMENT OF THE ARMY FIELD MANUAL

TRANSPORTATION TERMINAL TRANSFER COMPANY



**HEADQUARTERS, DEPARTMENT OF THE ARMY
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DEPARTMENT OF THE ARMY
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TRANSPORTATION TERMINAL TRANSFER COMPANY

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CHAPTER 1

INTRODUCTION

1. Purpose and Scope

a. This manual is a training, planning, and operational guide for unit commanders, staff officers, and other personnel associated with the organization and employment of the transportation terminal transfer company, TOE 55-118. It describes the organization, mission, assignment, capabilities, equipment, concept of employment, and operational techniques of this unit. The material presented herein is applicable without modification to both nuclear and nonnuclear warfare.

b. Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to the U. S. Army Combat Developments Command Transportation Agency, Fort Eustis, Va.

2. Operational Environment

a. The transportation terminal transfer company functions primarily at inland terminals in the field army area under the supervision of the transportation brigade in the field army support command (FASCOM), and in COMMZ under a logistical command or a terminal command. Assignment and attachment, command relationships, unit functions, and operational techniques will vary in accordance with the needs at the respective terminals. The operational variations imposed by different modes of transport are discussed individually in chapter 4.

b. FASCOM (fig. 1) is established as a major subordinate unit of the field army to command and control field army combat service support units and operations. The FASCOM headquarters operates generally on the basis of assigning missions to subordinate units for execution—a system of centralized control and decentralized operations. Detailed functions and responsibilities of the support command are contained in FM 54-3.

c. The transportation brigade provides transportation support on an army-wide basis, deploying its units throughout the field army area to provide both local-haul and line-haul transportation support, transportation movements management, and terminal facilities. These functions are conducted generally in accordance with the methods of operation of the transportation intersectional service of the theater army logistical command (TALOG) as outlined in FM 54-1. The structure of the transportation brigade is tailored to match the particular support requirements, and the number of subordinate units, including terminal transfer companies, will vary according to the situation. Figure 2 shows a type transportation brigade, made up of a personnel services company, a motor transport group, a transport aircraft group, a movements control center, and three terminal transfer companies. Essentially, the brigade transport units provide the connecting link between the transportation intersectional services and direct support, general support, and/or using units in the field army area. In addition, the brigade provides forward-moving transportation for cargo delivered by Air Force aircraft into the field army service area. Detailed operational responsibilities of the brigade and its organizational elements are discussed in FM 55-9.

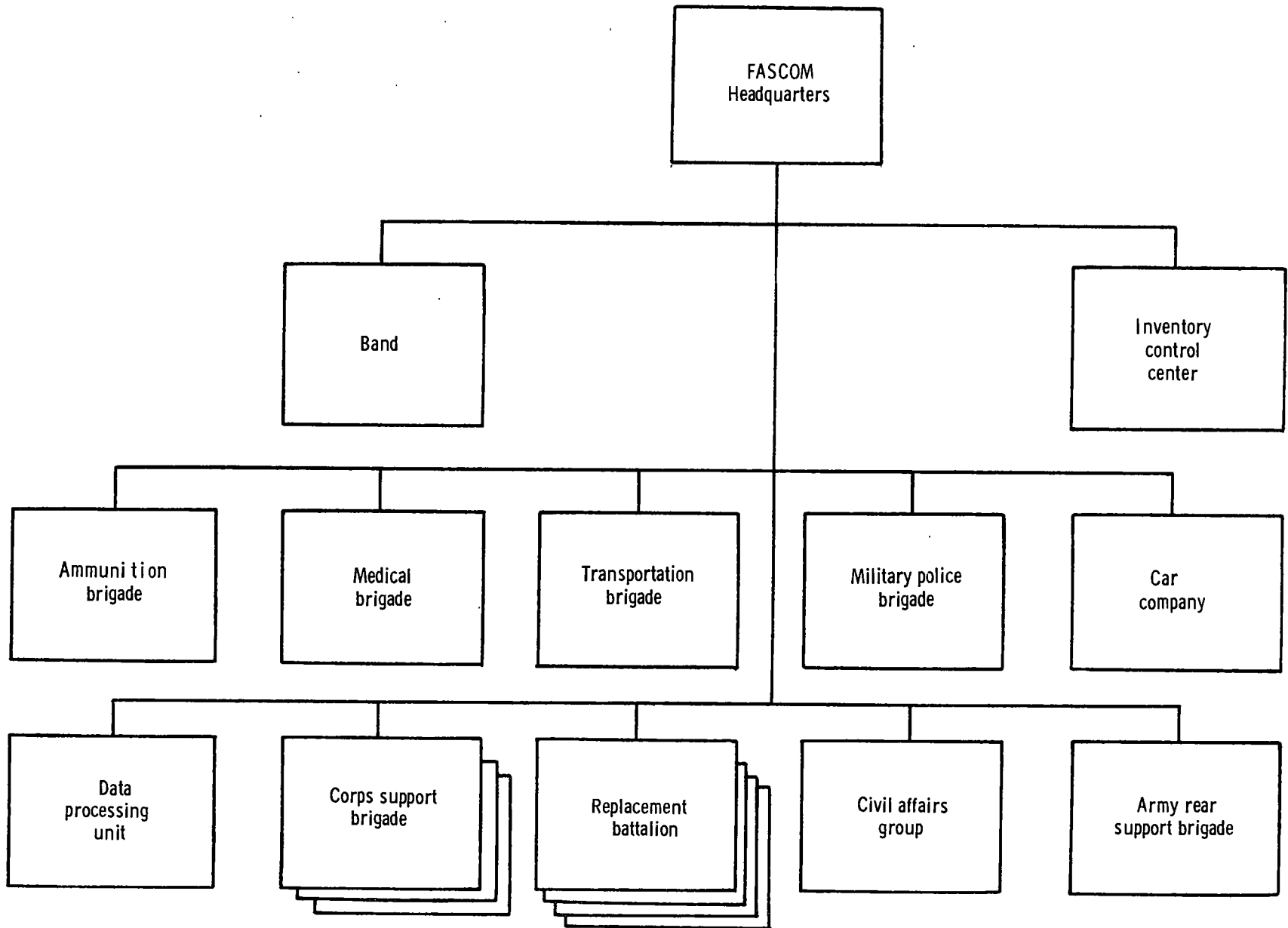


Figure 1. Type field army support command organization.

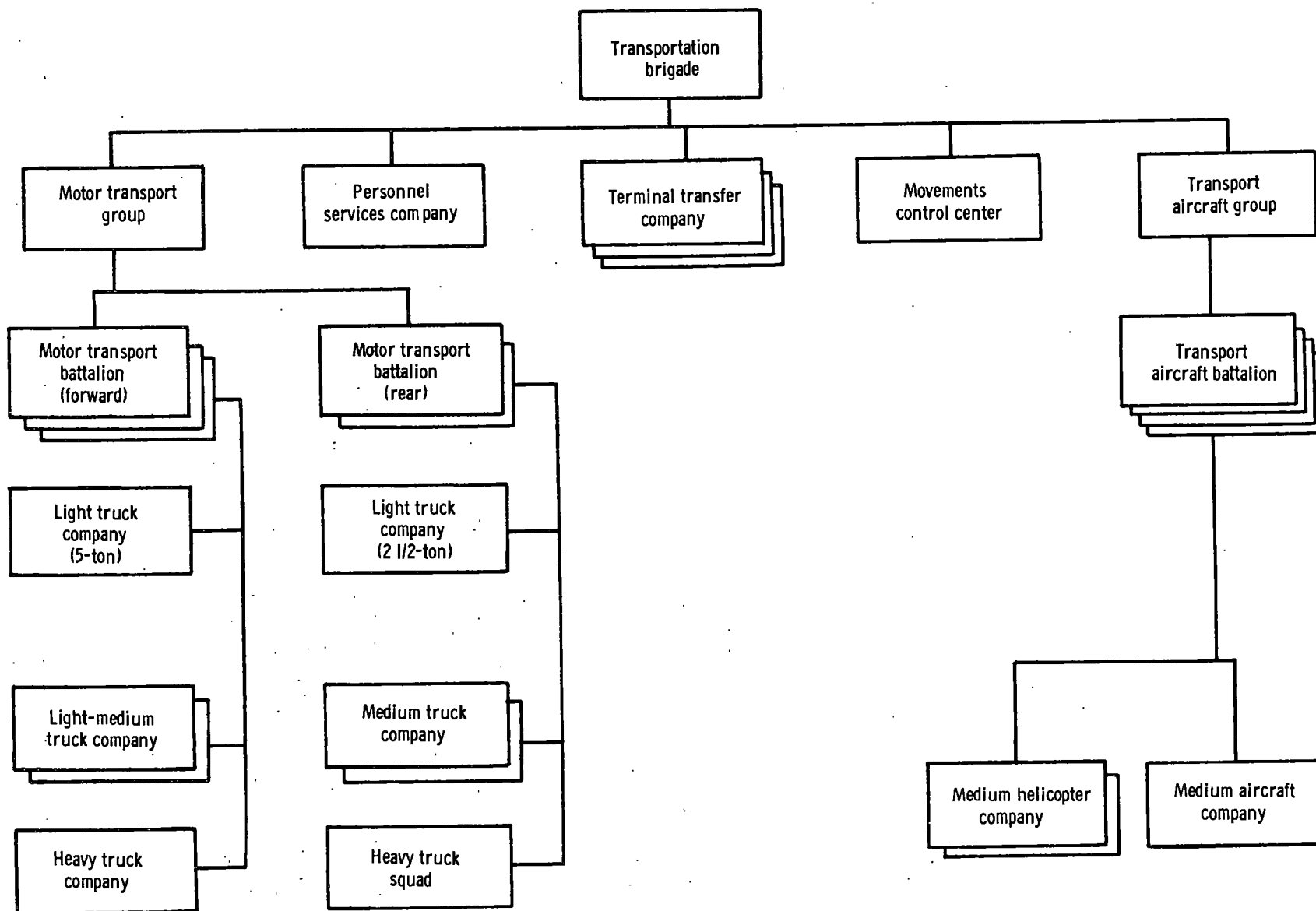


Figure 2. Type transportation brigade organization.

CHAPTER 2

ORGANIZATION

3. General

The transportation terminal transfer company is organized and equipped to transfer cargo at all types of Army inland terminals except large inland waterway terminals serving ocean-type shipping. It consists of a company headquarters, an equipment platoon, and three terminal transfer platoons, each containing a platoon headquarters, a cargo equipment squad, and four 10-man cargo transfer squads (fig. 3). This structure includes personnel to process and prepare documentation for all cargo handled and personnel and tools to perform organizational maintenance of unit equipment.

4. Mission

The mission of this unit is to transship cargo at Army air, rail, motor, and inland barge terminals. This includes unloading, segregating, repackaging, temporary holding, documenting, and loading cargo wherever a change in carrier occurs.

5. Employment

The terminal transfer company is normally employed with each of its three platoons assigned to work a separate terminal. This degree of dispersion is practicable since each platoon is organized and equipped to function independently while carrying out the primary mission. When elements of less than platoon size are needed, the required number of cargo transfer squads and the necessary equipment can be detailed to other terminals or transfer points for short periods. Intra-unit dispersion is inherent to the organization, but overall effectiveness will be decreased when elements are dispersed over too great an area for extended periods. Therefore, the company headquarters or platoon headquarters must be relocated when it is evident that administrative, maintenance, and communication problems can be reduced or eliminated by decreasing the distances between elements.

6. Assignment

a. The normal assignment of a terminal transfer company is to a transportation brigade or to a logis-

tical command. When assigned to the transportation brigade, the company or its elements will be attached to the motor transport group or to the transport aircraft group. This attachment is on a mission basis and provides the group with the necessary cargo transfer capability. Operation and control of the entire terminal facility is assigned to a battalion or a company of the group having primary transport responsibility.

b. The terminal transfer company is not normally assigned to operate at distribution points, but the company or its elements may be committed in support of supply units performing these functions if cargo backlog or similar conditions indicate a requirement for temporary employment of this type.

c. Inland waterway terminal assignment of this unit should be limited to the transfer of cargo from barges and small canal boats to another transportation mode. Port, beach, and inland ship canal cargo discharge operations are functions of the transportation terminal service company (TOE 55-117). FM 55-52 describes the employment and operations of the terminal service company.

d. The terminal transfer company may also be employed to assist in staging units taking part in airborne operations.

7. Capabilities

a. A full-strength terminal transfer company is capable of transshipping an average of 900 short tons of cargo daily. This tonnage capability is based on a 20-hour day and takes into account all procedures incident to the movement of the cargo. The reduced strength transfer capability is 600 short tons daily, and is based upon the same factors as the full-strength planning figure.

b. Each operating platoon with its normal complement of personnel and equipment can transfer 300 short tons of cargo per day. This capability is retained when the platoons are detached from the parent organization as described in paragraph 5. Establishment of cargo transfer terminals in the

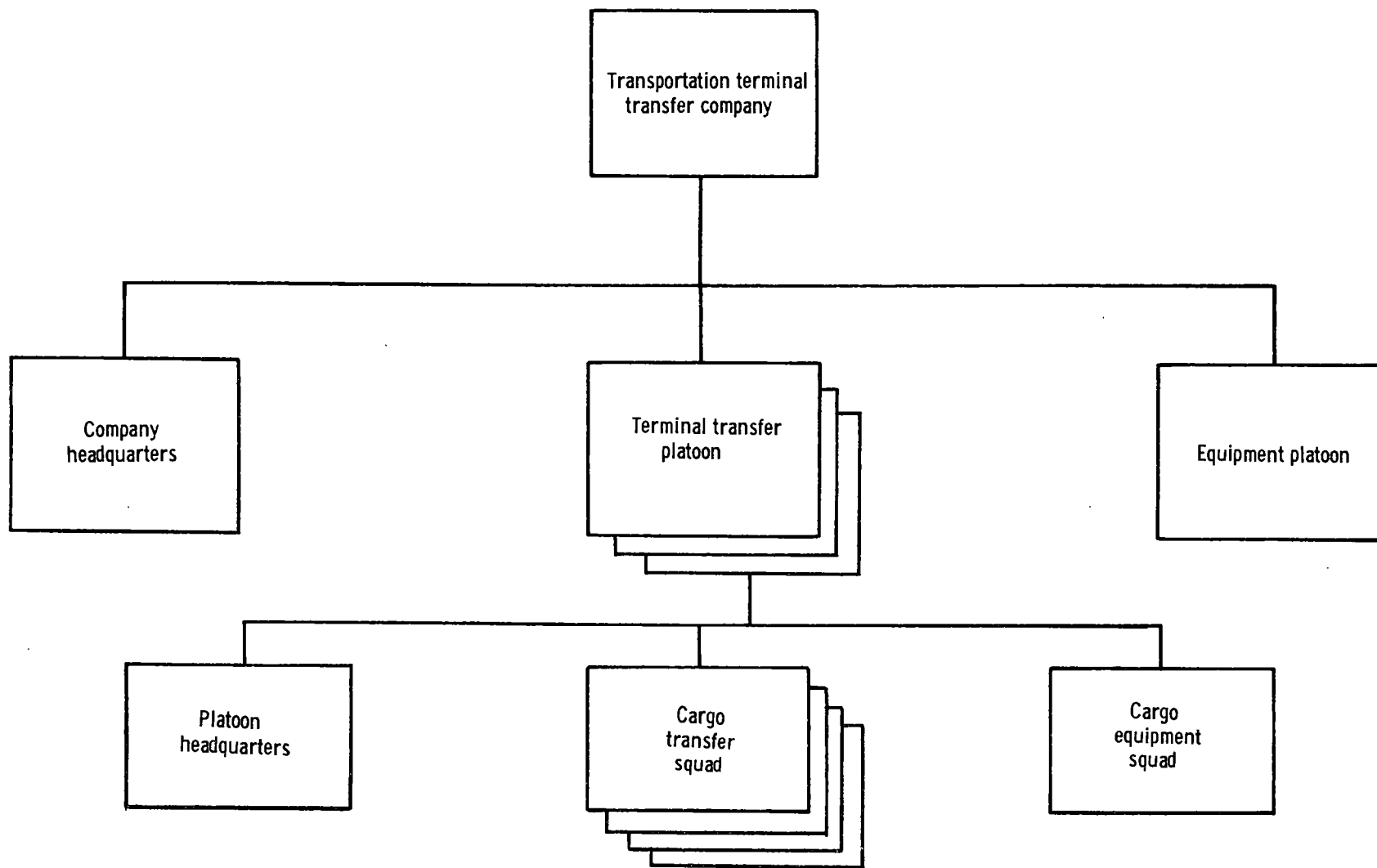


Figure 8. Transportation terminal transfer company organization.

corps and field army service area will be dictated by terrain features and tactical considerations. Many of these terminals will average a daily cargo throughput that is less than the capability of an operating platoon. In this situation, the required number of cargo transfer squads, documentation clerks, and materials handling equipment operators are detailed to the site on an as-needed basis.

8. Equipment

The terminal transfer company is equipped with 6,000-pound and 15,000-pound rough-terrain fork-

lifts, 20-ton rough-terrain cranes, handtrucks, roller conveyers, trucks and trailers, and various cargo slings necessary for the performance of its mission. TOE 55-118 also provides for substitute authorization of standard 4,000- and 6,000-pound forklifts and warehouse tractors and trailers when the area of operations is suitable for this type of equipment. Other equipment augmentations or substitutions may be provided for particular missions under special authorization. In addition, sufficient tools and repair parts are provided for organizational maintenance of all unit equipment.

CHAPTER 3

PLANNING

9. Staff Planning

a. A determination as to numbers, types, and locations of terminals within the field army area results from staff planning at FASCOM, transportation brigade, or higher level. Terminal planning at this level normally includes the following five-step process:

- (1) *Step 1.* Computation of the terminal workload required to support the operation, expressed as cargo tonnage per day.
- (2) *Step 2.* Estimation of terminal capacity, which is the total tonnage that can be received, processed, and cleared through the terminal in one day.
- (3) *Step 3.* Estimation of construction requirements, which are the requirements for repair and rehabilitation of facilities and construction of new facilities necessary to increase the terminal capacity to equal the required terminal workload.
- (4) *Step 4.* Estimation of equipment requirements, which is the amount of equipment needed to process the required workload through the terminal with maximum efficiency.
- (5) *Step 5.* Estimation of personnel requirements, which are the units and individuals needed for administration and operation in processing the required workload through the terminal.

b. FM 101-10 contains a detailed checklist for estimating inland terminal capacity and treats terminal planning at staff level in detail.

10. Unit Planning

Unit level planning begins when the company is assigned the mission to perform terminal transfer functions at a specific site. If the terminal facility exists before the assignment of the terminal transfer company or its elements, the initial planning procedures will include a meeting between the transfer unit commander and the transport mode commander to define and determine mutual support requirements. The meeting should be followed by a joint

inspection of the terminal area to acquaint the transfer unit commander with the layout. Tentative real estate allocations for all units to operate at or from the proposed terminal are normally made during this area reconnaissance.

11. Operational Planning

Once the area and general mission are assigned, the following factors provide the basis for operational planning by the unit commander:

a. Physical characteristics and layout of the terminal area—

- (1) Physical restrictions on working space.
- (2) Availability of hard surfaces in the transfer areas.
- (3) Existing facilities for storage and maintenance of materials handling equipment and other equipment.
- (4) Proximity of exit routes to transfer points.
- (5) Distances between unloading and loading points and temporary holding areas.

b. Characteristics of transportation equipment—

- (1) Number of individual carriers that can be handled simultaneously.
- (2) Turnaround time of delivery transportation.
- (3) Unit loading and unloading rates for types of transportation.
- (4) Effects of size and maneuverability of carriers on location of transfer points within the terminal.
- (5) Effects on use of and requirements for materials handling equipment.

c. Types of cargo to be handled—

- (1) Size and type of packaging.
- (2) Average weights of units of cargo.
- (3) Requirements for breakdown into smaller lots or consolidation for reloading.
- (4) Shelter and protective requirements in holding areas.
- (5) Fragility and/or perishability.
- (6) Problems involved in and precautions for handling hazardous cargo.

d. Requirements for and selection of temporary holding areas—

- (1) Estimated availability of clearance transportation as compared with volume of delivery transportation.
- (2) Shelter and protection requirements.
- (3) Additional documentation required.
- (4) Distances from loading and unloading points.
- (5) Requirements for materials handling equipment in holding area.

e. Composition of work force—

- (1) Number and size of teams required, based on the above factors and the planning guides outlined in paragraph 12.
- (2) Allocation of materials handling equipment according to types of carriers and types of cargo.
- (3) Arrangement of shifts for around-the-clock operation.
- (4) Provisions for consolidation of documentation.

f. Establishment of unit procedures for documentation, communications, supply, and maintenance of equipment.

g. Provisions for area defense and damage control (based on overall terminal and area plans).

12. Personnel and Equipment Requirements

a. Time studies of cargo handling operations indicate that the following are valid averages for long-range planning purposes:

- (1) When cargo must be handled entirely by hand, personnel requirements can be computed on the average of $\frac{1}{2}$ ton per man-hour for a 10-hour shift. For example, the number of men required to handle 120 short tons of cargo per 10-hour shift is computed as follows:

$$\begin{aligned}\text{Number of men} &= \frac{\text{Daily tonnage}}{\text{Shift length in hours} \times \frac{1}{2} \text{ ton per man-hour}} \\ &= \frac{120}{10 \times \frac{1}{2}} \\ &= \frac{120}{5} \\ &= 24\end{aligned}$$

- (2) The above formula is valid only for the normal 10-hour shift where the daily tonnage requirement is expected to remain constant. It includes the working supervisors but does not provide for documentation of the cargo. Generally, one cargo checker per shift is sufficient at each loading or unloading site. However, it is good practice to train terminal transfer unit cargo handlers as checkers to meet additional requirements should they occur.

- (3) Normally, a maximum of five men can be effectively employed to load or unload an Army aircraft or truck by hand. This crew consists of a working foreman and four cargo handlers, or a half-squad. Two of the men work in the cargo compartment of the carrier and the other two on the ground, loading platform, or other carrier involved in the cargo transfer. The foreman divides his time between the two and assists as needed. One squad can load or unload two trucks or two aircraft by hand when the carriers are located close enough together to permit the squad leader and the single cargo checker to properly discharge their duties at each location.

- (4) An entire squad is required to load or unload a rail car by hand—four working in the car and four on the outside. The supervisor and checker assist as required.

- (5) Because inland waterway craft do not normally carry cargo that can be entirely manhandled, full employment of the equipment platoon and the cargo equipment squads are required in this type of operation.

b. Cargo should be transferred mechanically when the supplies are unitized and the materials handling equipment is compatible with the carriers.

For planning purposes, the personnel requirements for mechanical handling of cargo by such equipment as rough-terrain forklifts, cranes, and/or tractor-trailer trains is usually limited to an operator for each piece of materials handling equipment and appropriate supervisory personnel.

c. The key to effective and safe employment of personnel and equipment is continuous supervision and training. Each man must be impressed with the need to learn and practice safe working habits. This

is especially important in cargo transfer activities where heavy, bulky items of supply are frequently being moved and stowed in confined spaces. The requirements for safety clothing and equipment, proper tools, and adequate lighting must be anticipated and planned for. Because work normally continues during periods of inclement weather and because night operations are routine, all personnel must be continually conscious of safety precautions and procedures.

CHAPTER 4

OPERATIONS

13. General

a. In most situations, field army transport services are provided principally by motor and air transport. Therefore, the terminal transfer company functions chiefly at terminals and transfer points serving those modes. These terminals are established throughout corps and army rear areas as required to provide an adequate transportation service. If usable terminal facilities exist, they are incorporated into the transportation network. However, since transportation must be responsive to the combat service support needs, cargo transfer activities normally occur under austere circumstances. Terminals serving rail and inland waterways are established as required along existing routes whenever sufficient lift capability cannot be provided by motor and air.

b. As used in this manual, the word "terminal" (air, motor transport, rail, or water) describes a terminating point for either cargo or transportation, regardless of its size or complexity. The characteristics of the various types of terminals at which this unit may be employed are discussed in this chapter.

14. Air Terminals

a. Although most often employed at Army air terminals, the terminal transfer company may be required under certain circumstances at Air Force terminals. The Air Force commander is responsible for providing terminal facilities at all points served by the Military Air Transport Service or troop carrier command aircraft, including loading and unloading both the aircraft and Army clearance and delivery transportation. However, the Army commander may, by local agreement (AR 59-106), provide personnel to participate in loading and unloading Army transportation at these facilities, and accept responsibility for loading and unloading Air Force aircraft at forward landing fields or airstrips that are not a regularly scheduled stop for troop carrier aircraft. In each of these situations, the terminal transfer company or its elements would be employed. In addition, the transfer company or its

elements may furnish personnel to load and unload Air Force troop carrier command aircraft conducting Army unit moves.

b. FASCOM establishes and operates Army air terminals in corps and field army rear areas to support Army air lines of communication. Necessary facilities and services are provided at these terminals to obtain timely and effective air movement of troops and supplies and to facilitate efficient use of available aircraft. The senior Army officer of the transport units operating at these points normally acts as terminal commander. Terminal transfer units load and unload aircraft, document cargo moving through the terminal, and operate cargo segregation and temporary holding facilities. The transportation movements officer (TMO) located at or near the terminal, coordinates the flow of cargo and passengers into and out of the airlift system.

c. When Army aircraft are employed in a local distribution operation, shipping and receiving agencies, rather than the terminal transfer company, are responsible for loading and unloading aircraft.

d. At division level, the division support command is responsible for air terminal operations, establishing one or more air terminals according to the volume of cargo received or distributed by air. Normally, division air terminals are operated by the supply and transport battalion, but elements of the terminal transfer company may be transported by air to forward air strips to unload cargo for limited periods of time.

e. Terminal transfer companies or their elements are assigned to air terminals on the basis of the daily amount of tonnage to be moved through the terminal. In order to obtain a smooth flow of cargo through these terminals, capacities of clearance and delivery transportation must be balanced with the transfer capability. The ideal situation is a perfect match in which cargo moves through and out of the terminal at the same rate that it comes in. This seldom occurs, however, and some degree of cargo

backlog must be anticipated. In many cases, a controlled amount of backlog is actually desirable so that a constant supply of cargo is available for forward movement. This condition is attained when average delivery rates into the terminal slightly exceed clearance transportation capacities. However, if the difference is too great, the throughput capacity of the terminal is reduced by the resulting increase in cargo handling within the holding areas. In all situations, every effort must be made to insure that cargo availability and clearance transportation are equal to the tonnage requirements of the ultimate user.

f. Most of the cargo delivered by air will be unitized on 40 x 48 pallets. The transfer unit's forklifts will be used to unload and move cargo from the aircraft unloading point to clearance transportation or temporary holding areas. Forklifts and cranes will be employed when loading or unloading surface transportation, and cargo discharged from aircraft will frequently be consolidated to make the most efficient use of the heavier cargo handling equipment. Conversely, cargo unloaded from surface carriers may have to be segregated and prepared into units compatible with aircraft space and weight capacities.

g. The transfer company is also provided with a variety of slings for rigging external loads for helicopter delivery, and arrangements must be made for periodic return of these items by the aircraft units so that a sufficient supply will always be available in the terminal.

h. Safety precautions to be observed during aircraft loading and unloading are outlined in appendix III (STANAG 3465).

15. Motor Transport Terminals

a. Motor transport terminals in the field army area are normally located at both ends of a line-haul operation where they form the connecting link between local hauls and the line-haul service. They may also be located at intermediate points along the line-haul route where terrain conditions necessitate a change in type of carrier. Terminal transfer elements provide the cargo handling service at motor transport terminals in the field army service area and function under the operational control of the senior motor transport commander. Cargo transfer at forward terminals is a responsibility of division support command personnel.

b. Motor transport unit capabilities in the field army area extend from 720 to 2,160 short tons per

company per day for local hauls and from 360 to 1,080 tons per day for line-haul operations. Therefore, terminal transfer requirements at motor transport terminals will range from an augmented platoon (additional squads) to two augmented companies (additional platoon), depending upon the number of truck units operating through the terminal.

c. Based on the planning factors noted in paragraph 12, a full-strength terminal transfer company is capable of discharging 12 trucks simultaneously in around-the-clock operations or 24 trucks at a time when employed on a 10-hour-per-day basis. Both light and medium truck companies operate with an average availability of 45 vehicles, each making 4 trips per day in local-haul operations and 2 trips per day on line-hauls. In order to permit the truck units to maintain this turn-around schedule, each transfer squad must load or unload an average of one truck per hour. At normal manual handling rates, this average can be maintained with relative ease—particularly when 2½ ton trucks are being used. However, when heavier vehicles are employed, the unit commander must insure that handling rates keep pace with the truck turn-around schedules by carefully allocating the unit's heavier cargo handling equipment among the squads so that delays at each transfer point are held to a minimum.

16. Rail Terminals

a. Rail terminals may include yard tracks, repair and servicing facilities, accommodations for train crews, and railheads. They are located at originating and terminating points of trains and at sites which mark the limits of the rail operating divisions. A railhead is a small yard or terminal on or at the forward end of a military railway where troops, supplies, and equipment are transferred to other modes of transportation for further movement forward.

b. Rail transportation is an intersectional transportation service. The units are assigned to TALOG, and operational control is exercised by the TALOG transportation officer. Rail capability within the field army will be exploited whenever usable facilities exist, provided that tactical considerations are favorable. Fluidity of the front, ability to maintain air superiority, extent of guerrilla activity, and the attitude of the native populace are some of the considerations affecting the decision to employ rail units and the extent of their employment in the combat zone.

c. Terminal transfer units are employed at terminating railheads in the field army area to transfer cargo delivered from communications zone depots and terminals to forward-moving FASCOM transportation. When so employed, the transfer unit works with the railway detachment operating the terminal but is under the operational control of the FASCOM transport organization responsible for further movement of the cargo forward.

d. The transfer unit's heavier cargo handling equipment, particularly the 20-ton rough-terrain cranes, will be put to maximum use at rail terminals. In general, the cranes will be employed to unload vehicles and other heavy equipment from flatcars and gondolas, and forklifts and conveyors will be used to discharge boxcars. Although heavier cargo items are handled in large proportion at rail terminals, the increased requirement for temporary holding and cargo breakdown and repackaging may tend to lower average handling rates, and this factor should be taken into consideration when computing throughput and clearance capacities.

e. As noted in paragraph 12, one cargo transfer squad, appropriately augmented with materials handling equipment, will be employed to unload each rail car. Although the capacities of U. S. rail cars average 50 tons each, 75 to 80 percent of the cars used in oversea theaters will be local equipment, most of which is rated in the 15-to-30-ton range. Generally, rail cars loaded with heavy bulky items such as ammunition, barbed wire, cement, vehicles, packaged weapons, and tools will be loaded to rated capacity. However, when the cargo is made up of such items as rations, clothing, and tentage, loads will average from 50 to 75 percent of the car's rated capacity.

f. Detailed information on transportation railway operations is contained in FM 55-21. Planning factors and other reference data are tabulated in FM 55-15.

17. Inland Waterway Terminals

a. An inland waterway terminal normally includes facilities for mooring, cargo loading and unloading, dispatch and control, and the repair and service of all craft capable of navigating the waterway. Terminals either exist or are established at the origin and terminus of the inland water route, and intermediate transfer points are located along the way wherever a change in transportation mode is required.

b. Inland waterway units are normally a part of

the TALOG transportation intersectional service, but they may be assigned to the base logistical command, advance logistical command, or the field army if the inland waterway operation takes place wholly within the area of responsibility of one of these commands.

c. Terminals along an inland waterway can be classified as general cargo, liquid, or dry bulk commodity shipping points. Terminals of the two latter types usually include special loading and discharge equipment that permits rapid handling of great volumes of cargo.

d. Two advantages of using inland waterways as a transportation mode are the ability to move large quantities of volume cargo and the relative ease of movement of large, heavy, or outsized loads. Disadvantages include the slow movement of the carrier, the vulnerability to sabotage and enemy action, weather and seasonal interruptions such as flooding and freezing, location restrictions on direct movement of supplies either forward or laterally, and requirements for rehandling at a terminal or transfer point because of shipment diversions. For these reasons, inland waterway capability is incorporated into the transportation service only when sufficient transport capability cannot be provided by the other modes.

e. Terminal transfer units are employed only at small intermediate cargo transfer points on inland waterway systems. Limitations on the unit's employment at these points are the size and configuration of the waterway craft and the capabilities and capacities of the unit's cargo handling equipment. When the waterway delivery means is composed largely of barges, landing craft, and similar types of floating equipment, the terminal transfer company may be employed in the transshipping process. However, when larger, ocean-type shipping is operated, transportation terminal service companies (TOE 55-117) must be assigned for loading and discharge. In the latter situation, the terminal transfer unit may be assigned to support terminal service company shore platoons in relieving holding area congestion by loading backlogged cargo onto clearance transportation.

f. Generally, if the waterway originates in the field army area, the terminal transfer company will be attached to the organization operating the waterway. However, if the waterway system originates in the communications zone and is part of the intersectional transportation service, the transfer unit in the field army area will be under the operational

control of the commander providing the clearance transportation.

18. Documentation

a. Cargo moving through inland terminals is documented in accordance with AR 55-10, Military Standard Transportation and Movement Procedures (MILSTAMP). The basic document for all cargo movements under these procedures is the Transportation Control and Movement Document (TCMD), a multipurpose form which can be prepared manually or mechanically as a punch card. The manual version of the form, DD 1384 is a seven-part document which is originated by the shipper for each transportation unit, and which accompanies the cargo to the ultimate consignee. Detailed procedures for preparing and processing the TCMD and allied documents are contained in AR 55-10, but a general outline of the internal documentation procedures at inland terminals is provided in this paragraph.

b. The terminal transfer company uses the TCMD as a dock receipt for cargo arriving at the terminal, as a cargo delivery receipt when the cargo is cleared forward, as an accountable document during temporary holding, and as a record of all shipments handled. Spaces are provided on the form to record transshipment and in-transit holding by location, time, and type of carrier. Normally, these are the only entries that will be made by terminal transfer personnel. However, when accompanying TCMD's are mechanically prepared or when extra copies are not available, record copies containing details such as control numbers, commodity designations, weight, pieces, cube, shipper, consignee, etc., will be prepared by the transfer company. In addition, a locally prepared register or index of these record documents should be maintained by platoon and/or company documentation sections.

c. The receiving checker is responsible for tallying the cargo actually received against the accompanying TCMD and indicating discrepancies, damages, improper packing, and improper or insufficient markings on the form. When the receipted cargo is to be immediately shipped out, the checker records transshipment and handling data in the spaces provided on the document, prepares record copies as required, and hands the completed TCMD to the operator of the forwarding carrier. The record copy is signed by the carrier, and sent to the company or platoon documentation section for registering and filing.

d. If a shipment is to be held temporarily because of lack of sufficient clearance transportation, receiving and storage data are recorded on the accompanying document and a record copy is prepared for filing by the documentation section. When the cargo is ready for forwarding, the documentation section prepares any new documents necessitated by consolidation or breakdown of shipments and turns these over to the proper checker, who completes the shipping information in the spaces provided. Completed record copies are then registered and filed by the documentation section.

e. In large terminal complexes, the volume of cargo handled may require more detailed shipment planning by the terminal transfer company, in which case a Shipment Planning Worksheet (app. C5, AR 55-10) may be used. This document, which is explained in detail in AR 55-10, facilitates assembly of shipment units and transportation units for both storage and transporting activities, and provides a basis for preparation of the TCMD's.

f. Additional forms and documentation procedures that may be required will be explained in appropriate theater, FASCOM, or TALOG directives.

19. Personnel Moves

While the terminal transfer company is designed to function primarily in cargo transfer operations, it may on occasion be required to assist in the movement of personnel through a terminal to which it is assigned. Situations in which it could be so employed are as follows:

a. *Intraterminal Unit Moves.* When requested by the troop movement officer or the terminal commander, transfer company personnel can assist in processing a unit through the terminal by serving as guides and by providing transport and materials handling equipment for movement of the troops and equipment from the point of debarkation to the loading area.

b. *Casualty Evacuation.* Terminal transfer personnel may assist in evacuation of casualties only when requested to do so by the senior medical corps representative responsible for transfer of the patients and only in the manner directed by him and his assistants. Extreme care must be exercised when moving the sick and injured, and personnel untrained in this duty should not be used. However, the transfer operation can be materially aided by using unit personnel as terminal guides and as assistants in loading and unloading accompanying supplies and equipment.

c. *Prisoners of War, Refugees, and Displaced Persons*. Intraterminal movements of persons in these categories will be conducted under the control and supervision of military police and/or civil affairs personnel. When requested, members of the transfer company may assist as guards, guides, or interpreters and may help move property, supplies, and equipment.

20. Communications

a. Internal communications capability is provided principally by radios, telephones, and messengers. These means support administrative and operational control within the unit and transmit or relay REPSHIPS (reports of shipments) and other daily operational data to the appropriate control center or headquarters. They also link the company elements with the parent organization when platoons or cargo transfer squads are dispersed to separate terminals.

b. Each operating platoon has the organic radio capability to control a cargo transfer operation within a terminal and to maintain radio contact with unit headquarters if the distance is not more than 32 kilometers (20 miles). When dispersed farther, the platoon's radios will net with those of the terminal being served, and communications with the company headquarters can be by telephone and messenger. In all instances, inter-unit telephone communication is part of the area land-lines system.

c. All personnel whose anticipated duties may require radio operation must be trained to use those radios authorized in the unit. This instruction should include, but need not be limited to the following:

- (1) Placing the set in operation.
- (2) Correct voice procedures: phonetic alphabet; call signs; authentication requirements; clear, concise, standard terminology; and message acknowledgement.
- (3) Procedures for maintaining verbatim written record of messages and maintaining the radio logbook.

d. Truck drivers, equipment operators, documentation clerks, and other selected individuals should be trained as messengers. The efficiency of the company messenger service depends upon the selection and training of the persons who serve in this capacity. For this reason, reliable men should be chosen,

and their training must emphasize the importance of this duty.

e. Visual and sound signals may also be used as a supplementary means of communication. Visual signals may consist of particular arrangements or characteristics of lights, displays of color-coded panels, or arm and hand signals. Sound signals may be transmitted by whistles, klaxons, gongs, horns, or other noise-producing equipment. Both visual and sound signals have restricted applications, but either method is suitable for transmitting messages rapidly over short distances by prearranged signal.

21. Supply and Maintenance

a. Company supply activities are supervised by the supply sergeant, who is assisted by an armorer, a supply clerk, and a light truck driver. The equipment platoon has two shop clerks who perform supply and administrative functions relative to maintenance and operation of the equipment.

b. Personnel responsible to the unit commander for maintenance are assigned to the company headquarters and to the equipment platoon. Unit levels of maintenance are performed in accordance with the technical manuals, lubrication orders, or other appropriate technical publications issued with each item of equipment. Operational and maintenance records and procedures will be kept and accomplished under the Army equipment records system as required by AR 750-5. TM 38-750 and TM 750-1 prescribe the responsibilities and outline the procedures for implementing this system.

22. Mess

In the normal employment of the terminal transfer company, the operating platoons are dispersed to outlying terminals. In this situation, the platoons are satellited upon the terminals for messing, and the required numbers of terminal transfer unit cooks are detailed to these messes to assist as needed. When nearby transfer points are being worked by elements of the company, the personnel so detailed may mess with the supported unit, they may be transported to the company area for meals, or the food may be sent to the transfer site. Regardless of which messing arrangement is used, a two-shift 20-hour working day requires that four meals be served daily.

APPENDIX I

REFERENCES

1. Army Regulations

AR 55-10	Military Standard Transportation and Movement Procedures (MILSTAMP).	FM 10-8	Air Delivery of Supplies and Equipment in the Field Army.
AR 220-10	Preparation for Overseas Movement of Units (POM).	FM 10-10	Quartermaster Service in the Theater of Operations.
AR 320-5	Dictionary of United States Army Terms.	FM 11-20	Signal Operations, Theater of Operations.
AR 320-50	Authorized Abbreviations and Brevity Codes.	FM 19-30	Physical Security.
AR 600-20	Army Command Policy and Procedure.	FM 19-40	Handling Prisoners of War.
AR 725-50	Issue of Supplies and Equipment (MILSTRIP).	FM 21-5	Military Training.
AR 750-5	Organization, Policies, and Responsibilities for Maintenance Operations.	FM 21-30	Military Symbols.
		FM 21-31	Topographic Symbols.
		FM 21-40	Small Unit Procedures in Nuclear, Biological and Chemical Warfare.
		FM 21-48	Chemical, Biological, and Nuclear Training Exercises and Integrated Training.

2. Field Manuals

FM 1-5	Army Aviation Organization and Employment.	FM 24-18	Field Radio Techniques.
FM 1-60	Army Aviation Air Traffic Operations—Tactical.	FM 24-20	Field Wire and Field Cable Techniques.
FM 1-100	Army Aviation.	FM 31-15	Operations Against Irregular Forces.
FM 3-5	Chemical, Biological, and Radiological (CBR) Operations.	FM (C) 31-20	Special Forces Operations Techniques (U).
FM 3-8	Chemical Corps Reference Handbook.	FM 31-21	Guerrilla Warfare and Special Forces Operations.
FM 5-20	Camouflage, Basic Principles and Field Camouflage.	FM 31-25	Desert Operations.
FM 5-21	Camouflage of Fixed Installations.	FM 31-30	Jungle Operations.
FM 5-22	Camouflage Materials.	FM 31-60	River-Crossing Operations.
FM 5-23	Field Decoy Installations.	FM 31-70	Basic Cold Weather Manual.
FM 5-29	Passage of Mass Obstacles.	FM 31-71	Northern Operations.
FM 7-10	Infantry Company, Infantry and Airborne Battle Groups.	FM 31-72	Mountain Operations.
FM 7-30	Infantry, Airborne, and Mechanized Division Brigades.	FM 54-1	The Logistical Command.
FM 8-35	Transportation of the Sick and Wounded.	FM 55-4	Transportation Movements in Theaters of Operations.
		FM 55-6	Transportation Services in Theaters of Operations.
		FM 55-8	Transportation Intelligence.
		FM 55-15	Transportation Corps Reference Data.
		FM 55-21	Rail Transportation, Higher Units.

FM 55-22	Transportation Railway Operating Battalion.
FM 55-51	Transportation Terminal Commands, Theaters of Operations.
FM 55-52	Transportation Terminal Battalion and Terminal Service Company.
FM 57-10	Army Forces in Joint Airborne Operations.
FM 100-5	Field Service Regulations; Operations.
FM 100-10	Field Service Regulations; Administration.
FM 101-5	Staff Officers' Field Manual; Staff Organization and Procedure.
FM 101-10, Part I	Staff Officers' Field Manual; Organizational, Technical and Logistical Data, Part I—Unclassified Data.
FM 101-10-2	Staff Officers' Field Manual; Organizational, Technical and Logistical Data. Extracts of Tables of Organizations and Equipment.

3. Technical Manuals

TM 3-220	Chemical, Biological, and Radiological (CBR) Decontamination.
TM 3-350	Improvised CBR Protective Shelters.
TM 10-405	Army Mess Operations.
TM 38-230	Preservation, Packaging and Packing of Military Supplies and Equipment.
TM 38-250	Packaging and Handling of Dangerous Materials for Transportation by Military Aircraft.
TM 38-750	The Army Equipment Records System and Procedures.
TM 38-750-1	Maintenance Management.

4. Training Circulars

TC 5-9	Near Infrared Night Vision and Detection Equipment and Its Application.
TC 55-6	Transportation Cargo Carrier Company (Tracked).

TC 55-10	Off-Road Motor Transport Operations.
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5. Army Training Programs

ATP 21-114	Basic Combat Training Program for Male Military Personnel Without Prior Service.
ATP 55-111	Army Training Program for Transportation Terminal Units.

6. Army Subject Schedules

ASubjSed 3-2	Chemical, Biological, and Radiological Protection and Decontamination.
ASubjSed 5-2	Engineer Power Tools.
ASubjSed 11-18	Radioteletype Communications.
ASubjSed 11-19	Radio Communications.
ASubjSed 11-23	Teletype Communications.
ASubjSed 11-36	Radiotelephone Operations.
ASubjSed 19-4	Prisoner of War Operations.
ASubjSed 19-13	Security of Military Installations.
ASubjSed 21-1	Concealment and Camouflage.
ASubjSed 21-3	Field Sanitation.
ASubjSed 21-4	First Aid.
ASubjSed 21-5	Guard Duty.
ASubjSed 21-6	Individual Protective Measures Against Chemical, Biological, and Nuclear Attacks.
ASubjSed 21-8	Maintenance, Supply Economy, and Cost-Consciousness.
ASubjSed 21-9	Maps, Compass, Aerial Photograph Reading, and Elementary Sketching.
ASubjSed 21-13	Elementary Signal Communications.
ASubjSed 21-16	Anti-Infiltration and Antiguerilla Warfare Training.
ASubjSed 55-1	Subject Schedule for Organization, Mission, Functions, and Capabilities of Transportation Corps TOE Units.
ASubjSed 55-4	Organization, Mission, and Functions of Transportation Officers in Theater of Operations.
ASubjSed 55-5	Organization, Capabilities, and Limitations of Transport Services.

ASubjSed 55-6 Transportation Movements in
 Theaters of Operation.
ASubjSed 55-9 Fundamentals of Transporta-
 tion Movements in Theaters
 of Operations.
ASubjSed 55-10 Introduction to Transportation
 Intelligence.
ASubjSed 55-14 Transportation Intelligence.
ASubjSed 55-26 Cargo Documentation.
ASubjSed 55-27 Freight (Cargo) Handling.
ASubjSed 55-28 Highway Transport Opera-
 tions.
ASubjSed 55-30 Organization and Operation of
 Transportation and Unit
 Type Motor Pools.

ASubjSed 55-32 Highway Regulation and Traf-
 fic Control.
ASubjSed 55-34 Movement by Rail.

7. Army Training Tests

ATT 55-100 Instructions for the Conduct
 of Army Training Tests for
 Transportation Corps TOE
 Units.

8. Forms

DD Form 1384 Transportation Control and
 Movement Document (Man-
 ual).

APPENDIX II

DEFENSE MEASURES

Section I. DEFENSE AGAINST AIRBORNE AND GUERRILLA ATTACK

1. General

History shows that no unit or installation is safe from attack solely by reason of its location within the theater. Units of the enemy located behind front lines can wage a bitter and constant fight to destroy supply convoys and installations. The operations of these forces demand that defensive measures be adopted by service units regardless of location.

2. Defense Against Airborne Attack

Plans for defense against enemy airborne attack must be based on sound knowledge and understanding of the characteristics of airborne operations and of the capabilities and limitations of enemy airborne forces. Defense against airborne attack is characterized by speed, aggressiveness, and flexibility. Immediate aggressive action by all units in an area under airborne attack is vital. Prompt aggressive action takes full advantage of the disorganization of airborne forces incident to and immediately after landing. Defensive action alone offers no hope of success against strong determined airborne attack. Each company-size unit should have an SOP to be followed in case of an airborne attack. For details on the characteristics and limitations of airborne operations and defense against airborne operations, see FM 31-15, FM 57-10, and FM 100-5.

3. Characteristics of Guerrilla Operations

Guerrilla operations follow the same principles and methods of war as conventional operations; only the application differs. Guerrilla warfare is a war of quick paralyzing blows followed by swift withdrawals. Guerrillas generally avoid pitched battles and seldom defend objectives. They try to hold the enemy's forces at a stalemate, deliberately delaying a decision. Once the enemy is engaged, they look for a quick decision and if it does not develop, they withdraw. Their aim is to entice their enemy into a campaign that will demoralize him and consume his resources in futile retaliation.

4. Guerrilla Tactics

Besides seeking to destroy enemy personnel, guerrillas seek to destroy facilities that enable the enemy to operate. By attacking these facilities, which are normally lightly defended, they make the defender split forces. Dispersal of the defender's manpower is a primary objective of guerrilla tactics; this provides additional isolated weak spots for guerrillas to harass.

5. Fundamentals of Defense

a. The terminal transfer company will normally be part of a larger terminal organization and as such will have its defensive role assigned. This role will vary with each situation. Unit equipment may be employed to transport personnel to encircle or cut off any attacking force, or the unit may be required to defend in place. No matter what the role, the unit commander must know how to combat guerrilla action. The fundamentals discussed here are applicable to units of any size.

b. The fundamentals and tactics of defensive combat employed by frontline units are equally suitable for units combating guerrillas in any area. Commanders must adapt the fundamentals to fit the situation, particularly in reference to the number of personnel available to conduct the defense. These fundamentals include—

- (1) Proper utilization of terrain.
- (2) Security.
- (3) Mutual support.
- (4) Defense in depth.
- (5) All-round defense.
- (6) Coordinated fire planning.
- (7) Coordinated barrier planning.
- (8) Flexibility.

c. The unit commander must make an estimate of the situation and plan accordingly. Further information on defensive measures and measures for combating guerrilla action may be found in FM 7-10, FM 7-30, FM 31-15, FM 31-20, and FM 31-21.

Section II. DEFENSE AGAINST CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL ATTACK

6. General

a. Defense against chemical, biological, and radiological (CBR) attack consists primarily of protective measures by the individual or by the unit against CBR agents. Such agents may be used to kill, injure, or harass personnel; to deny observation or use of an area; or to burn material. Practical CBR defensive measures have been developed and can be readily learned by the individual.

b. Defense against CBR attack may be active or passive.

- (1) Active measures are those taken to hamper the enemy's use of CBR agents, such as the destruction of enemy CBR weapons and installations, destruction of enemy CBR supply dumps, etc.
- (2) The terminal transfer company will be concerned primarily with passive defense measures against CBR. Passive measures are those that limit the effectiveness of enemy CBR attack. These measures in-

clude the use of warning systems, protective masks, protective equipment, special clothing, protective shelters, immunization procedures, field sanitation, first aid, self-aid, and decontamination. A detailed unit SOP should set forth passive defense measures for protection against CBR attack.

7. Responsibility

CBR defense training and the protection of a unit and its equipment against CBR attack are basic responsibilities of command. The unit commander is responsible for preparation of the CBR defense plan for the unit and for the proficiency of all personnel of the unit in performing their CBR defense duties with a minimum loss of efficiency. Technical advice and assistance in immunization procedures, field sanitation, and first aid are primarily a medical responsibility. For greater detail on CBR defense, see FM 21-40, FM 21-41, and FM 21-48.

Section III. DEFENSE AGAINST ATOMIC ATTACK

8. General

Nuclear explosions as yet have not been used in tactical situations. As a result, their effectiveness against trained units prepared for such type of warfare is not known. As with any type of attack, surprise increases the effectiveness. Timely warning of the enemy's capabilities and intentions will result in fewer casualties in men and material.

9. Training for Atomic Defense

a. Generally, every special defense organization within the military structure has the same objectives, whether directed toward defense against chemical attack, incendiaries, or high explosive bombs. These objectives also apply to organization for nuclear defense. Briefly, the objectives are—

- (1) To prepare the unit to meet attack.
- (2) To enable the unit to carry out its mission with a minimum of interference while under attack.
- (3) To minimize losses in personnel, equipment, and facilities.
- (4) To render such emergency assistance as may be possible to neighboring units and, when directed, to civilian installations.

b. All personnel should receive sufficient basic training in nuclear defense, beginning with simple instruction in basic bomb effects—blast, heat, and radiation—and how and when evasive action is possible. This training should include individual protection, use of protective equipment, principles of decontamination of personnel and equipment, and conduct in a contaminated area. Finally, each individual must be taught the part he must play in the radiological defense of his unit.

10. Contamination

After a nuclear explosion, every action possible should be taken to minimize the spread of the contamination. Within the contaminated area, eating, drinking, smoking, chewing gum, or any action which requires putting the hand to the mouth must be strictly avoided to prevent entry of radioactive particles into the body. Personnel should be warned against stirring up dust, stepping into puddles, brushing against shrubbery and trees, or touching buildings and objects in the contaminated area. It is even more dangerous to inhale radioactive particles than to take them into the digestive tract.

11. First Aid

As soon as the initial effects of the explosion are over, every survivor should look around to see if he can render first aid or emergency help of any kind to individuals nearby. It is important to emphasize that after an air burst the administration of such

help involves no special risks. There is no danger of additional contamination involved in approaching or touching a person who may have received a dose of nuclear radiation from an air burst. Persons with wounds, which might permit radioactive material to enter the body, should be taken to the nearest medical station for treatment.

Section IV. DEFENSE AGAINST AIR ATTACK

12. General

Air defense includes all measures designed to nullify or reduce the effectiveness of the attack of hostile aircraft or guided missiles after they are airborne. Air attacks are characterized by speed of execution, flexibility in choice of objectives, and wide variation in intensity of force applied. All units are responsible for their own security against air attack although aircraft warning nets and anti-aircraft measures are installed and supervised by higher headquarters (FM 100-5).

13. Means of Defense

Defense against air attack is conducted by active and passive measures. Active measures include all those taken to inflict damage upon the enemy or to hamper the execution of his mission. Passive measures are those taken to reduce the effectiveness of the attack. Passive measures include warning nets, dispersion, camouflage, deception, shelter, etc., as well as the medical, firefighting, and other repair and rehabilitation services.

Section V. AREA DAMAGE CONTROL

14. General

The area commander is responsible for the control of area damaged. Area damage control planning is designed to aid in the reestablishment of logistical support by minimizing the effects of enemy action or natural disaster (FM 100-10).

15. Area Requirements

The area damage control plan will include the following principal requirements:

- a. Protective measures: organization and control, training, dissemination of warnings.
- b. Rescue and medical treatment: first aid, evacuation, hospitalization.
- c. Reestablishment of normal operations: control of damage, salvage of material, monitoring and detecting contamination, instructions for reorganization of support.

16. Unit Requirements

The terminal transfer company may be responsible for any or all of the following:

- a. Preparing unit area damage control plan coordinated with sector plan.
- b. Placing unit plan in effect when local conditions require.
- c. When possible, organizing, equipping, training, and making available a light rescue squad.
- d. When possible, organizing, equipping, training, and making available an emergency decontamination squad.
- e. Initiating chemical, biological, and radiological surveys; posting areas; and reporting findings.
- f. Providing area damage control communications.
- g. Continuing normal mission.

APPENDIX III

SAFETY ON THE GROUND

Pertinent portions of STANAG 3465 covering safety procedures at air terminals are included here for the information of terminal transfer company commanders. The complete text of this STANAG is contained in FM 55-46.

1. Safety Perimeter

For each type of aircraft, a safety perimeter must be defined and forbidden to all personnel not taking part in the maintenance, supply, and loading or unloading operations.

2. Vehicle Traffic

a. All traffic on the airfield will be regulated according to a traffic plan. The speed of vehicles must be specified by panels on congested or dangerous routes.

b. The movement of vehicles is forbidden within the safety perimeter except for supply, loading, or unloading operations.

3. Loading, Unloading, and Supplying of Aircraft

a. In order to avoid any damage to the aircraft, the loading and unloading operations must be

carried out under the control of a competent representative of the air transport unit with experienced personnel and appropriate equipment.

b. Special attention must be given to the movement of vehicles within the safety perimeter. In all cases, chocks will be placed at such a distance that the vehicle cannot damage the aircraft.

c. The loading and unloading of heavy or bulky loads must be carried out with special precautions.

4. Fire Risks

a. It is essential that all fire risks be eliminated on the hard stands. Any flame must be prohibited within 100 feet (30 meters) of the safety perimeter. Smoking will be prohibited within the same area.

b. Fire extinguishing equipment must be placed in conspicuous positions near the hard stand.

5. Explosives, Ammunition, Dangerous Cargo

a. Explosives, ammunition, and other dangerous cargo must be stocked at the prescribed safety distance from the hard stands.

b. The handling of this type of cargo must be carried out with prescribed precautions.

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
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Major General, United States Army,
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USCONARC (10)	55-6 (3)
USACDC (10)	55-12 (3)
USAMC (15)	55-62 (5)
ARADCOM (10)	55-116 (3)
ARADCOM Rgn (10)	55-118 (2)
OS Maj Comd (5)	

NG: State AG (3); Units—same as Active Army except allowance is one copy to each unit.

USAR: Units—same as Active Army except allowances is one copy to each unit.

For explanation of abbreviations used, see AR 320-50.

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FM 55-56 TRANSPORTATION TERMINAL TRANSFER COMPANY—1965

